

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID L. RICHARDSON and KENNETH D. GORHAM

Appeal No. 1998-1914
Application No. 08/528,130

ON BRIEF

Before HAIRSTON, FLEMING, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1, 4, 5, 10, and 11.

We reverse.

BACKGROUND

The invention is directed to an apparatus and method for determining the frequency of a received RF signal by sequentially applying the received signal to selected individual filters having predetermined pass bands. The magnitudes of the filtered signals are compared with the magnitude of the received RF signal. Claim 1 is reproduced below.

1. A method for determining a frequency of an RF signal, comprising the steps of:
 - sequentially applying the RF signal to selected individual ones of a plurality of filters, each of the plurality of filters having a predetermined pass band;
 - determining magnitudes of signals that are output from individual ones of the plurality of filters;
 - comparing each individual one of the determined magnitudes to a magnitude of the RF signal by applying each respective individual filter output signal and the RF signal to a comparing device; and
 - determining a frequency of the RF signal as being within the predetermined frequency pass band of a filter that outputs a largest magnitude output signal relative to the magnitude of the RF signal, and where the filter output signal magnitude exceeds a first predetermined reference magnitude level.

The examiner relies on the following references:

Hurvitz	2,886,777	May 12, 1959
Bailey	4,301,454	Nov. 17, 1981

Claims 1, 4, 5, and 11 stand rejected under 35 U.S.C. § 102 as being anticipated by Bailey.

Claim 10 stands rejected under 35 U.S.C. § 102 as being anticipated by Hurvitz.

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The Advisory Action mailed August 29, 1997 (Paper No. 10), referring to applicants' response filed "Aug 23, 1997" [sic; August 4, 1997, Paper No. 8] states that claims 3 and 7-9 would be allowable, and are allowed for purposes of appeal. We assume that claims 3 and 7-9 have been allowed upon entry of the amendment filed with appellants' Paper No. 8.

Claims 2 and 6 have been canceled.

We refer to the Final Rejection (Paper No. 7) and the Examiner's Answer (Paper No. 13) for a statement of the examiner's position and to the Brief (Paper No. 12) and the Reply Brief (Paper No. 14) for appellants' position with respect to the claims which stand rejected.

OPINION

In the Answer, the examiner refers to the section 102 rejection of claims 1, 4, 5, and 11 over Bailey which appears in the Final Rejection. The Final Rejection (page 4) states that claims 1, 4, 5, and 11 are rejected under 35 U.S.C. § 102 as being anticipated by Bailey, but refers to the Office action mailed January 24, 1997 (Paper No. 5) "[a]s to claims 4 and 5." Paper No. 5, however, states that claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey.

The Manual of Patent Examining Procedure (MPEP) § 1208 (Seventh Edition, Rev. 1, Feb. 2000) notes the impropriety of referring to more than one prior Office action,

directly or indirectly, and with good reason. The present situation raises an initial question as to whether the rejection of claims 4 and 5 is based on section 102 or section 103 of Title 35. We conclude, as did appellants, that the examiner changed his position in the Final Rejection, and the instant rejection over Bailey is for anticipation. (See Brief, page 10.) In any event, the rejection of claims 4 and 5 set out on pages 3 and 4 of Paper No. 5 does not establish a prima facie case of obviousness, but is based in part on unsupported conclusion. “Bailey does not include amplitude comparison with the input RF signal. However, this is an obvious option and completely possible with this hardware apparatus, if it was at all desired to do so.” (Paper No. 5, page 4.)

The examiner’s current position is that Bailey does disclose amplitude comparison with the input RF signal. Bailey’s “method for incorporating a comparison of the incoming rf signal with the filter outputs is illustrated in Fig. 6 as well as in col. 8, lines 30-65.” (See Answer, page 4.) The examiner contends that “the wideband discriminator output” effectively represents the RF signal, and the computer compares the wideband discriminator output with the “voting logic/channelizer outputs.” (See id.)

We agree with appellants, as asserted on page 4 of the Reply Brief, that the reference does not meet the requirements of instant claim 1. Even if the “wideband discriminator output” were to represent the received RF signal within the ambit of claim 1, there is no comparison of the RF signal with “each individual one” of the magnitudes output from the filters.

The operation of the “channelizer” and “voting logic” functional blocks shown in Figure 6 are explained in the reference prior to the column 8 teaching pointed out in the rejection. As explained principally at column 5, lines 23-61 and column 6, lines 27-68, latch 72 (Fig. 4A) of a voting logic circuit is set if that particular filter in an odd-numbered channel has the output of greatest value in the odd-numbered group of channels. An identical test is performed for the even-numbered channels, and the latch representing the filter having the output of greatest value in the even-numbered channel group is also set. The first greatest value circuit 68 provides an output signal 70 equal to the magnitude of the input channel of the odd-numbered channels having the greatest magnitude. Similarly, second greatest value circuit 78 provides an output value 79 corresponding to the maximum output signal from the even-numbered channels.

As shown in Figure 4B, the output signals 70 and 79 are connected to a difference circuit 108, with the difference between the signals directed to computer 24 via A/D converter 110. The difference signal, as shown in Figure 7, is used by the computer, along with the other input signals, in determining where the signal lies in the filter passband having the greatest output signal.

Thus, even if there is a comparison of the magnitude of the RF signal through the use of wide band discriminator 128 (Fig. 6), the comparison is with a difference signal formed from the greatest value present in two respective groups of filters. There is no

comparison between “each respective individual filter output signal” and the RF signal, as required by instant claim 1.

Since we agree with appellants that the examiner’s finding of anticipation is erroneous, we cannot sustain the rejection of claim 1. Each of independent claims 4 and 11 sets forth a respective “processing means” having the “comparing” function that is not found in the reference. We therefore do not sustain the section 102 rejection of claims 1, 4, 5, and 11 over Bailey.

Turning to the rejection of claim 10 as being anticipated by Hurvitz (Final Rejection, page 5), the examiner points to Figure 2 of Hurvitz and refers to a “glowing electroluminescence.” “Comparing the amplitudes can thus be done by sight.” (Id.)

Initially, we note that Figure 2 of Hurvitz does not depict a physical device, but shows a “circuit equivalent in electrical properties to the transmission line or condenser of Figure 1.” See Hurvitz, column 3, lines 18-39. We also agree with appellants, for the reasons presented on pages 13 through 16 of the Brief, that the reference does not support a finding of anticipation.

With particular reference to column 3, line 40 through column 4, line 65, Hurvitz discloses conductors 13 (Figs. 3 and 4) connected in series with a piezo-electric crystal 14. A common signal input terminal 17 is provided for all the crystals 14. If one of the crystals 14 is resonant to the frequency of the input signal, current is permitted to flow to

associated conductor 13, which in turn produces a glow in the phosphor lying between the conductor 13 and underlying conductive layer 11.

Hurvitz thus fails to disclose sequentially applying an input RF signal to selected individual filters. Additionally, there is no disclosed way for comparing the magnitude of the input signal to each individual one of the determined magnitudes of the individual filter output signals. The second embodiment of Hurvitz (Fig. 5) suffers the same deficiencies as the embodiment we have described. We therefore do not sustain the section 102 rejection of claim 10 over Hurvitz.

CONCLUSION

The examiner's decision in rejecting claims 1, 4, 5, 10, and 11 is reversed.

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REVERSED

KENNETH W. HAIRSTON
Administrative Patent Judge

MICHAEL R. FLEMING
Administrative Patent Judge

HOWARD B. BLANKENSHIP
Administrative Patent Judge

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